



Marijuana Policy: Informing a Smart Approach For Traffic Safety

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Outline

- Impacts of Drugged Driving
- Recommendations for Next Steps
- Marijuana Policy Discussion

Scope of the Problem

Conservative estimates show that 20% of crashes in the U.S. are caused by drugged driving. This translates into about 6,761 deaths, 440,000 injuries and \$59.9 billion in costs each year.

NATIONAL ROADSIDE SURVEY

Weekend Nighttime Drivers Testing Positive for Drugs, by Drug Category

Drug Category	Percentage
Illegal	11.3%
Medications	3.9%
Illegal & Medications	1.1%
<i>Number of Drivers Tested</i>	<i>5,910</i>

Source: 2007 National Roadside Survey of Alcohol and Drug Use by Drivers: Drug Results, U.S. Department of Transportation, National Highway Traffic Safety Administration, December 2009.
Note: "Medications" includes prescription and over-the-counter drugs. Percentages are weighted. Results are based on oral fluid and blood testing; 83.7 percent of drivers tested negative for drugs.

Illicit Drugs Versus Alcohol

- HHS: Survey indicated that in 2009 more drivers aged 12 and older drove under the influence of alcohol (12% or 30.2 million) than drugs (4.2% or 10.5 million) in the previous year
- NRS: 16% drugs, 12% alcohol (2007)
- MTF: 16% of high school seniors across the US drove after drinking alcohol while 14% reported driving at least once after smoking cannabis in the prior two weeks (2001-2006)

FATALITY ANALYSIS REPORTING SYSTEM (FARS)

November 2010: NHTSA's *Fatality Analysis Reporting System* (FARS) shows **one in three** (33%) **of all drivers** with known drug test results who were killed in motor vehicle crashes in 2009 tested **positive for drugs** (illegal substances as well as over-the-counter and prescription medications)

FARS - Page 2

- 2005-2009: **total number of drivers killed** in motor vehicle crashes ***declined 21%***
- 2005-2009: **involvement of drugs** in fatal crashes ***increased by 5%***
 - Drug involvement means drugs were **found in the driver's system** and does not imply impairment or indicate that drug use was the cause of the crash.

Why is Drugged Driving Dangerous?

- The principal concern regarding drugged driving is that driving under the influence of any drug that **acts on the brain** could impair one's motor skills, reaction time, and judgment.
- Drugged driving is a public health concern because it puts not only the **driver at risk**, but also **passengers** and **others** who share the road.

NIDA InfoFacts

Marijuana and Drugged Driving

- 60 experimental studies (laboratory, driving simulator, and on-road) found that **behavioral and cognitive skills for driving** were **impaired** in a dose-dependent fashion with **increasing THC blood levels**
- Real and simulated driving studies indicate **marijuana** can **negatively affect** a driver's attentiveness, perception of time and speed, and ability to draw on information obtained from past experiences
- Impairment **increases significantly** when **marijuana** use is **combined** with **alcohol**
 - Studies have found that many drivers who test positive for alcohol also test positive for THC, making it clear that **drinking and drugged driving are often linked behaviors**

Attitudes

A study of college-aged American youth showed that they perceived driving after cannabis use as more acceptable than driving after alcohol use.

McCarthy, D.M, Lynch, A.M., & Pederson, S.L. (2007). Driving after use of alcohol and marijuana in college students. *Psychology of Addictive Behaviors*, 21(3), 425-430.

Drug Recognition Experts

46 States and DC have implemented
**Drug Evaluation and Classification
Programs**

Drug Recognition Experts learn to detect characteristics in a person's behavior or appearance that may be associated with drug intoxication.

But we need more than this...

Lab Standards

- We need to standardize drugged driving detection limits nationwide
- Oral fluids – the next generation?
- Difficulty of identifying uniform standard of impairment

States with Per Se Laws

“Per se” laws: it is illegal to operate a motor vehicle if there is any detectable level of a prohibited drug in the driver’s blood

Arizona, Delaware, Georgia, Indiana, Illinois, Iowa, Michigan, Minnesota, Nevada, North Carolina, Ohio, Pennsylvania, Rhode Island, South Dakota, Utah, Virginia, and Wisconsin

Other State laws define “drugged driving” as driving when a drug “renders the driver incapable of driving safely” or “causes the driver to be impaired”

Impacts

- 2012, *Epidemiological Reviews*: Six researchers from Columbia University's College of Physicians and Surgeons analyzed studies of MJ use and driving over the past two decades:

“Drivers under the influence of pot are twice as likely as other drivers to be involved in motor vehicle crashes, and that risk increases in a dose dependent fashion.”

Mu-Chen L. et al. “Marijuana Use and Motor Vehicle Crashes.” *Epidemiological Reviews*, 2012;34(1);65-72.
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Impacts

- 2012, *British Medical Journal*: Toxicology information from blood tests was used and compared to motor vehicle collisions.

“Acute cannabis consumption is associated with an increased risk of a motor vehicle crash, especially for fatal collisions. Rates of driving under the influence of cannabis have also risen in recent years...cannabis is consistently one of the most frequently detected psychoactive substances (second after alcohol) and individuals who drive within two hours of using cannabis have raised rates of collision.”

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Asbridge M. et al. “Acute cannabis consumption and motor vehicle collision risk: systematic review of observational studies and meta-analysis.”
British Medical Journal. 2012;344:e536.

Recent Impacts

According to the Colorado Department of Transportation, drivers who tested positive for marijuana in fatal car crashes DOUBLED between 2006 and 2010 though the rates of other drugs fell.



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¹ Colorado Fatality Analysis Reporting System (FARS). August 2011.

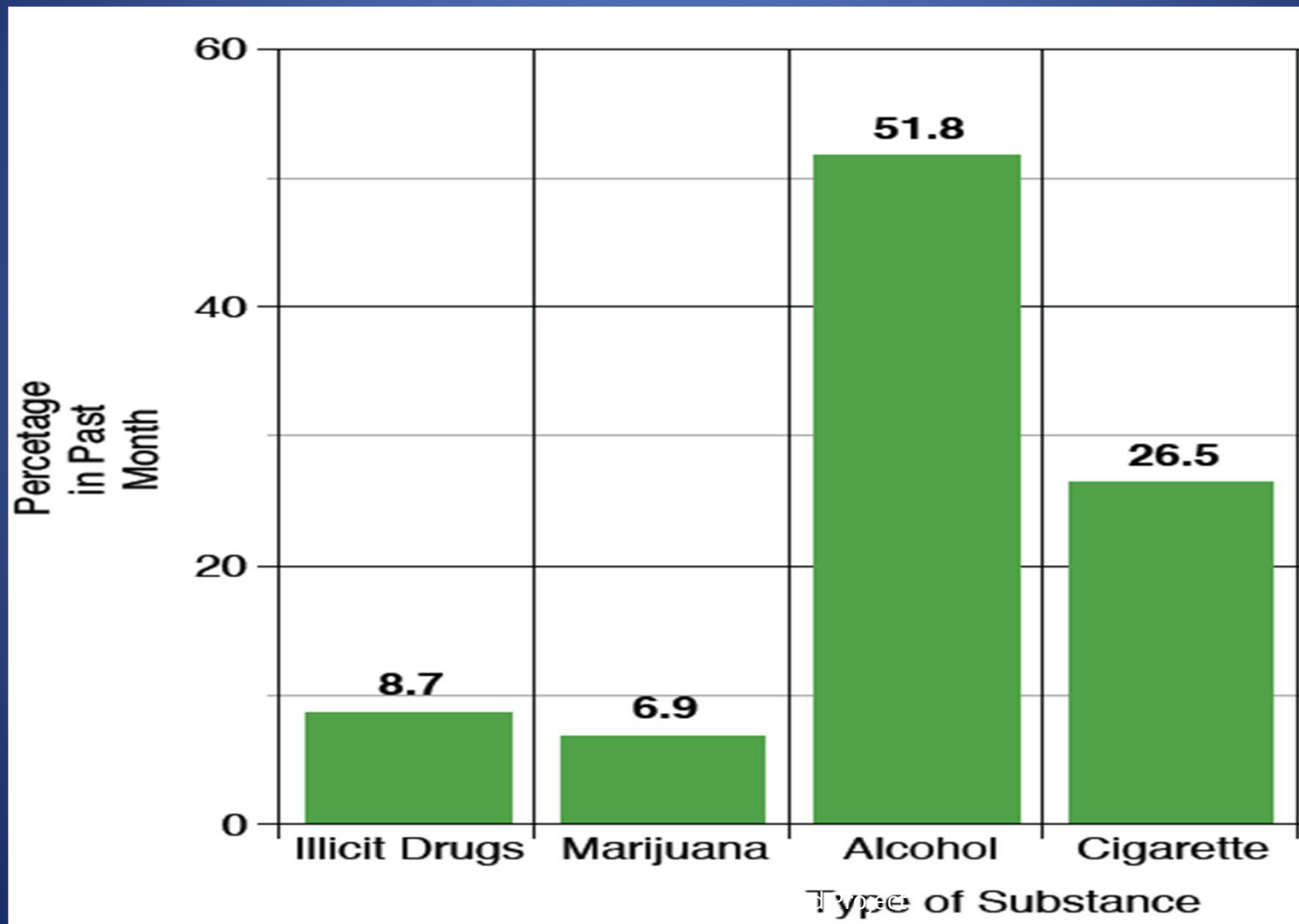
Recommendations

- Evaluate Impaired Driving Laws, Effectiveness of Drugged Driving Laws
- Evaluate and Improve Drugged Driving Data Collection
 - Fatality Analysis Reporting System
 - National Roadside Survey
 - Drug Evaluation and Classification Program
 - National Survey on Drug Use and Health and Monitoring the Future

Recommendations

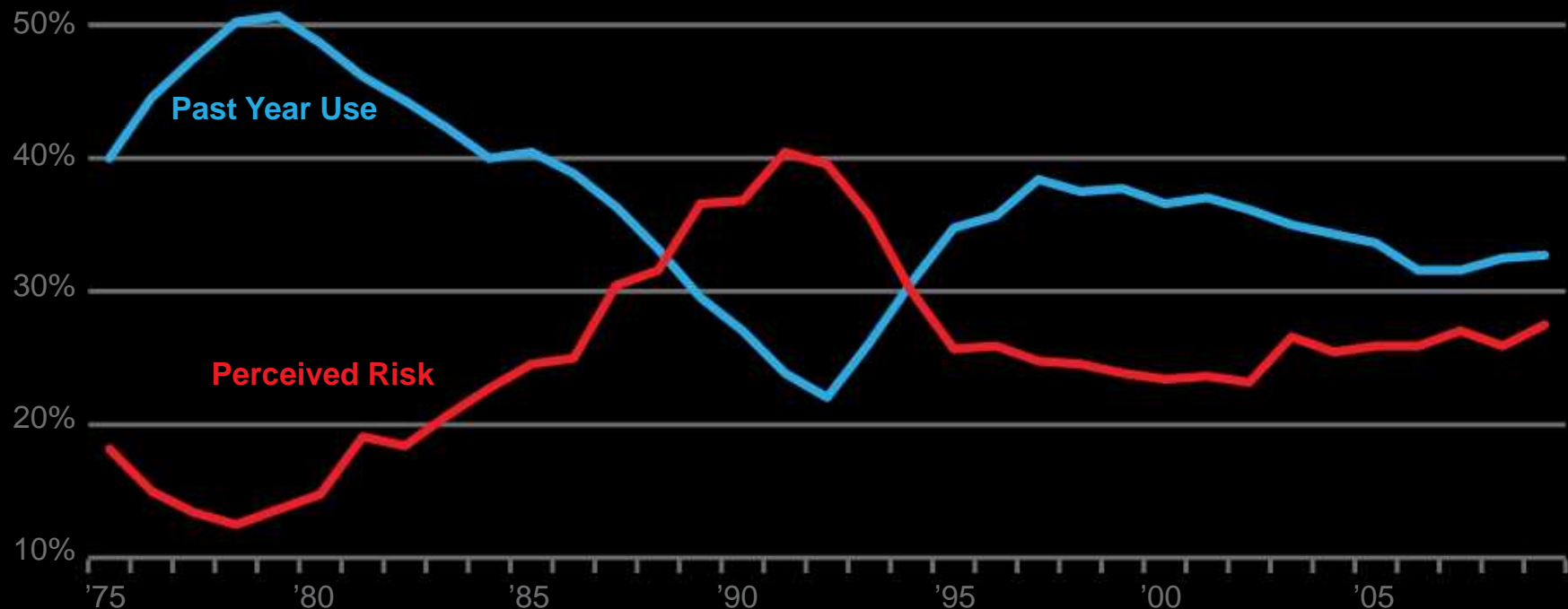
- Improve Drugged Driving Education
- Identify and Evaluate Promising Models for Drugged Driver Identification
- Standardize Drugged Driver Testing
 - Point of Contact Drug Testing (POCDT) Technology
 - Standardization of Lab Approaches for Drug Testing
- Conduct Drug Impairment Research
 - Conduct Case-Control Drug Risk Studies
 - Conduct Comprehensive Assessments of Drugs Most Frequently Found
 - Assessment of Impairment Risk for New Prescription Drugs
- Conduct Related Treatment Research
 - Screening, Brief Intervention and Referral to Treatment

Current Uses of Major Substances in General Population, 2011



Changes in Perceptions Lead to Changes in Reality

MARIJUANA USE AND PERCEIVED RISK AMONG 12TH GRADERS, 1975 TO 2009



Source: The Monitoring the Future study, the University of Michigan
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Marijuana and Kids



The adolescent brain is especially susceptible to marijuana use.

That means that when kids use, they have a greater chance of addiction since their brains are being primed.

More Drug Use = More Problems

Heavy Marijuana Use Lowers IQ¹

- A recent study found that those who used cannabis heavily in their teens and continued through adulthood showed a permanent drop in IQ of 8 points.
- **A loss of 8 IQ points could drop a person of average intelligence into the lowest third of the intelligence range.**

¹M.H. Meier, Avshalom Caspi, et al. 2012. "Persistent Heavy Cannabis Use and Psychological Decline from Childhood to Midlife." Proceedings of the National Academy of Sciences. www.learnaboutsam.org

Marijuana's Potential for Harm

This isn't your Woodstock Weed – much stronger than in 1960s or 1970s

Connected to changes in adolescent brain resulting in learning and memory problems, IQ loss, less life satisfaction



Doubles risk of car crash

Bronchitis/lung complications - Lung cancer link mixed; still learning

Relation to Mental Health

- Increased risk of psychosis
 - Risk of schizophrenia increased six-fold
 - (Swedish cohort study of 45,000 military conscripts over 15 years)*
- More treatment resistant



Cannabis use in adolescence and risk for adult psychosis: longitudinal prospective study Louise Arseneault, BMJ 2002;325:1212-1213 (23 November)

Andréasson S, Allebeck P, Engström A, Rydberg U. Cannabis and schizophrenia: a longitudinal study of Swedish conscripts. Lancet 1987; ii: 1483-1485.

175
Inhalants

282
Heroin

351
Stimulants

358
Hallucinogens

451
Tranquilizers

126
Sedatives

Dependence on or Abuse of Specific Illicit Drugs

Persons 12 or Older, 2008

1,411
Cocaine

1,716
Pain Relievers

4,199
Marijuana

Substance Abuse and Mental Health Services Administration. (2009). Office of Applied Studies.
Treatment Episode Data Set (TEDS): 2009 Discharges from Substance Abuse Treatment Services, DASIS.

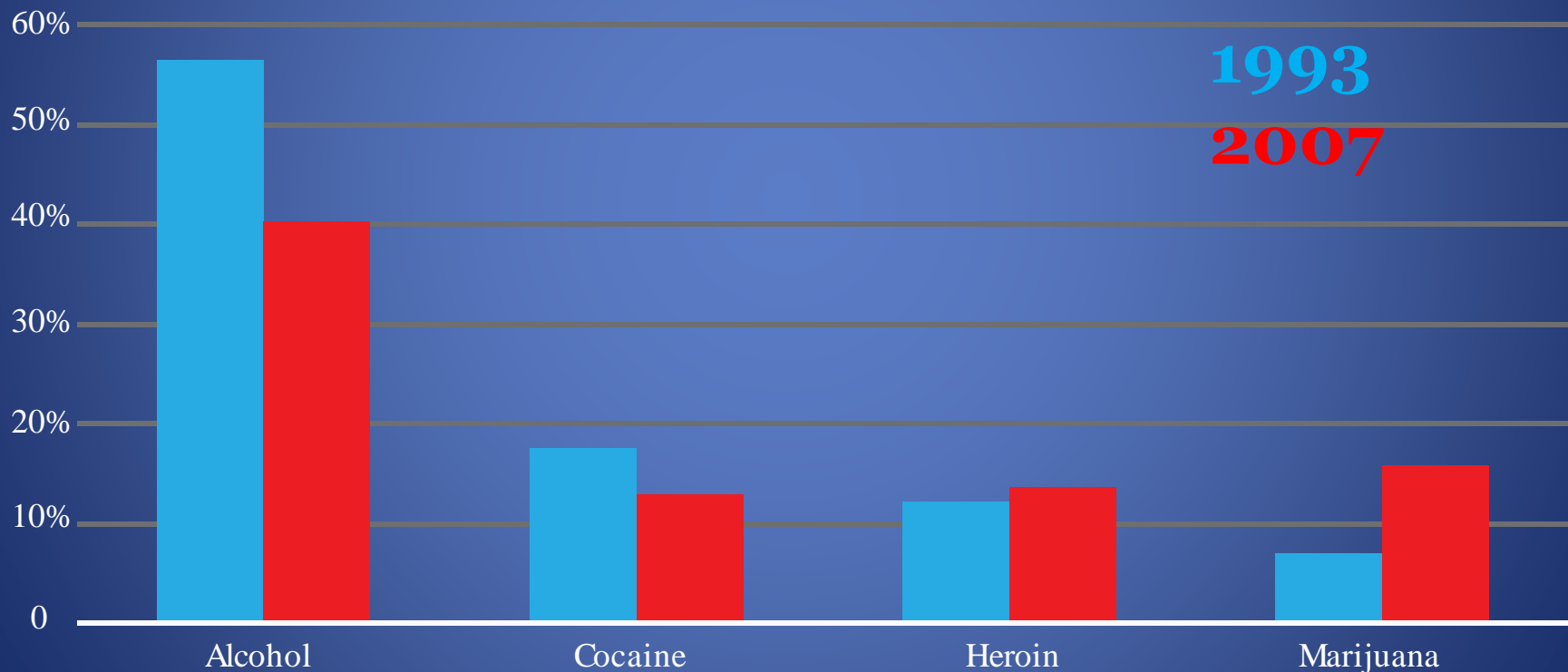
Dramatically Increased Marijuana Potency In Past 50 Years

Marijuana Potency (THC Levels): 1960 - 2011

Sources: The University of Mississippi Potency Monitoring Project and data found on <http://www.learnaboutsam.org>
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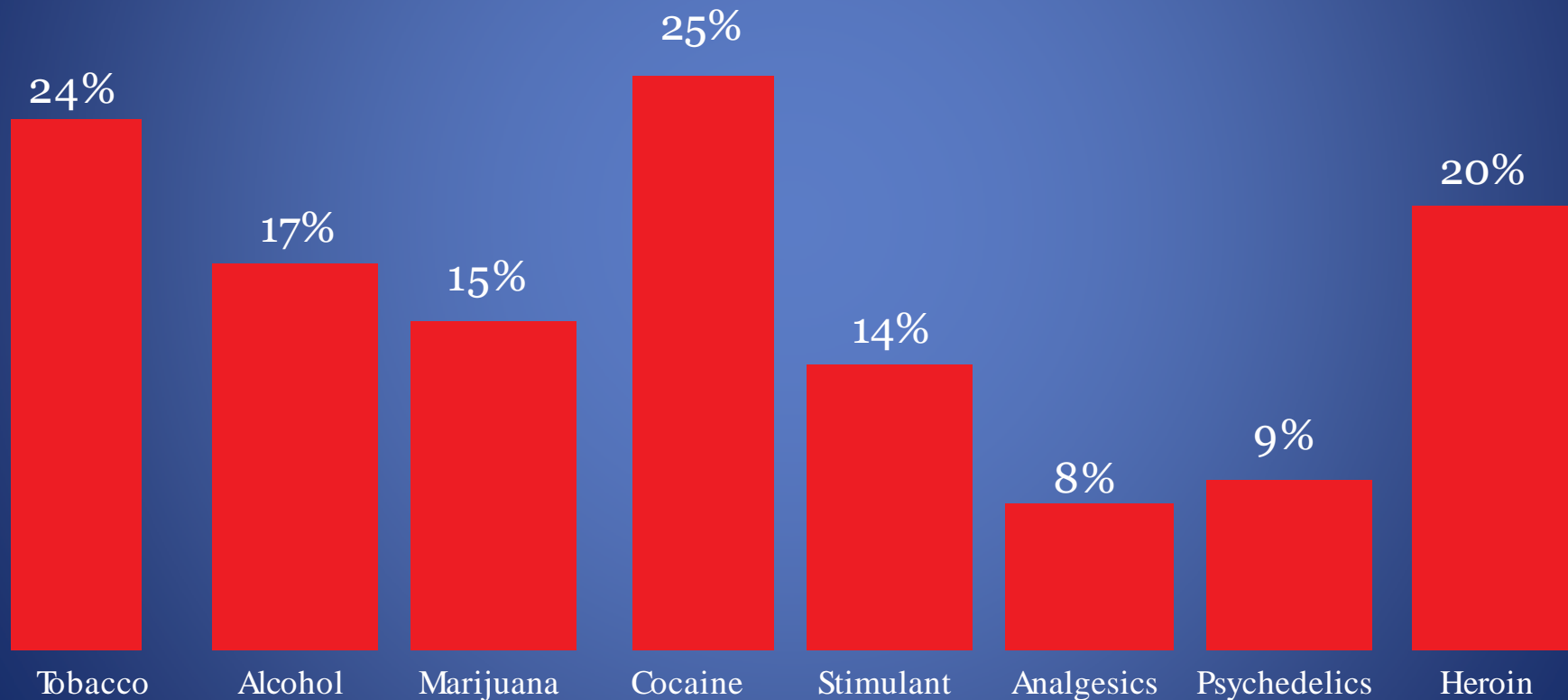
Increase in Marijuana Treatment Admissions When Use Levels Are Similar

PERCENT OF ADMISSIONS



Source: Treatment Episode Data Set, US Health and Human Services, 1993 & 2007

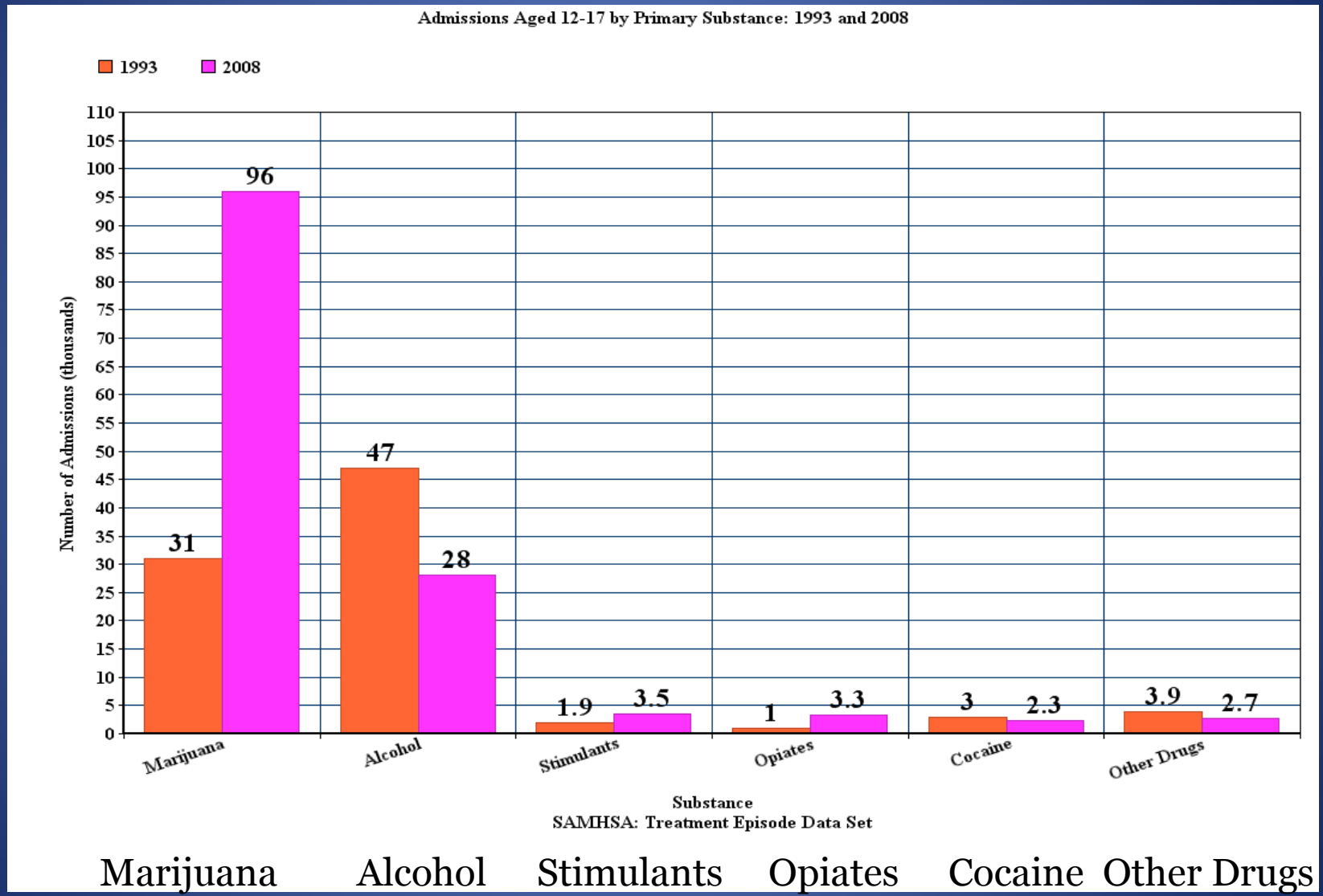
Addictive Nature of Drugs When Starting in Adolescence



Source: Anthony JC, Warner LA, Kessler RC (1994): Comparative epidemiology of dependence on tobacco, alcohol, controlled substances, and inhalants: Basic findings from the National Comorbidity Survey. *Experimental and Clinical Psychopharmacology* 2: 244 - 268

Primary Substance: Admissions (Aged 12 -17) 1993 (Orange) and 2008(Purple)

Admission Numbers in Thousands



“Medical Marijuana”



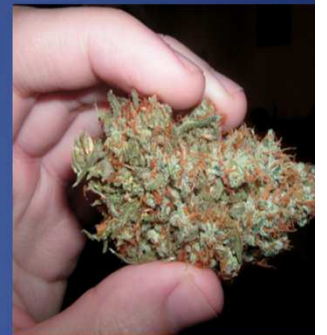
Purple DanX



Purple Erkle



Super Silver Haze



Trainwreck



Bubba Kush



OG Kush



Purple Kush



Sour Diesel

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Bypassing the FDA Process

Before FDA approves a drug as medicine, testing is done to:

✓ Determine the benefits and risks of the drug

✓ Determine how it may interact with other drugs

✓ Assure standardization of the drug

✓ Determine the appropriate dosage levels

✓ Identify and monitor side effects

✓ Identify safe drug administration

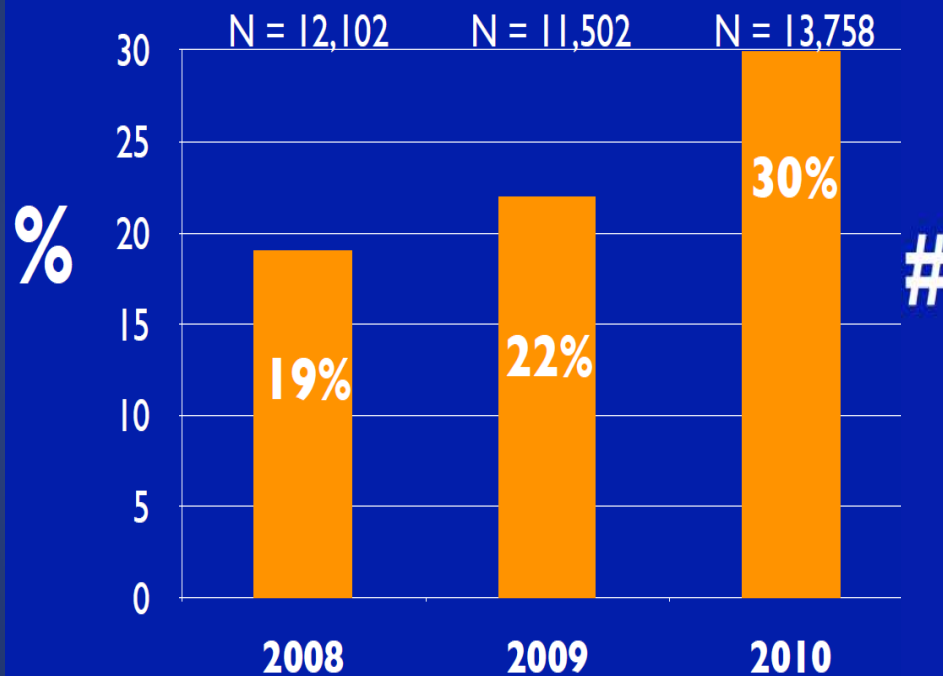
Medical Marijuana States Have Higher Youth Marijuana Use Rates

Two independent, peer-reviewed studies looking at medical marijuana states in the 2000s concluded that:

States with medical marijuana programs had an increase in marijuana use not seen in other states.

Colorado Data

Change in Teen MJ use pre/post 2009
grades 9-12 in Adams County, past month use



Adams County Youth Initiative, 2011

School Expulsions for Drugs - CO



<http://www.cde.state.co.us/cdereval/rv2011sdiincidents.htm>

Compassionate care or increased access to marijuana?

< 5%



- Less than 5% of card holders are cancer, HIV/AIDS, or glaucoma patients
- 90% are registered for ailments such as headaches and athlete's foot

Compassionate care or increased access to marijuana?

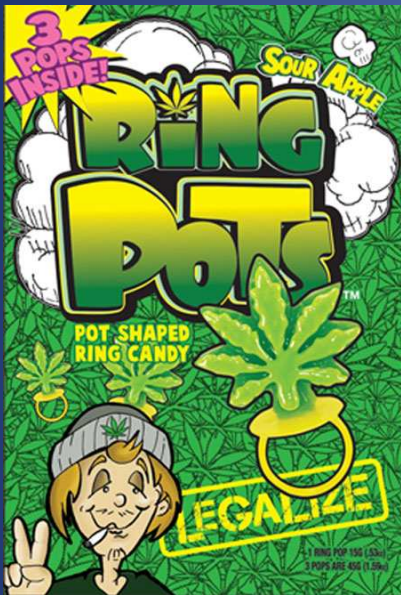
> 80%



- Most card holders in CA and CO are white men between the ages of 17 and 35
- No history of chronic illness
- History of Alcohol and Drug Use



Marketing to Children



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Denver Membership Card



Membership Card

For MMJ Card Registrations, Renewals, Doctors Evaluations
Call - 303-625-4012

For a list of offers and offer updates, please visit
www.coloradomedicallmarijuana.com

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\$1,500 Dispensary Credit

Call or Click 303-625-4012

**That doesn't mean that
components
in marijuana do not have
medical properties.**

**These are being
scientifically developed.**

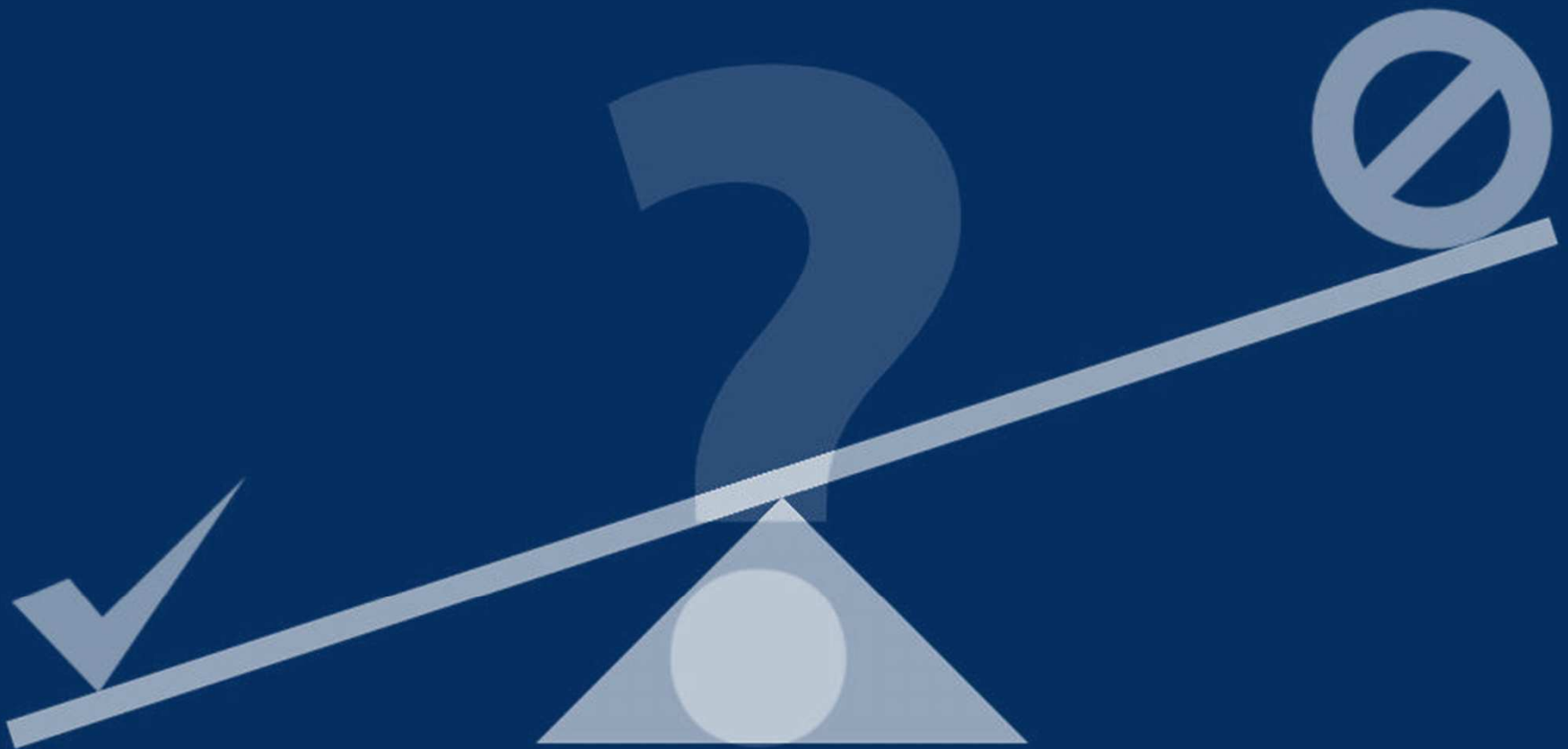
Cannabis-Based Medicines

- Research on the efficacy of cannabinoids is not focused on raw/crude marijuana, but on the individual components that may have medical use.
- *Sativex* is in the process of being studied (Extract; Equal Parts THC and CBD)
- Approved in Canada and across Europe
- Administered via an oral spray



All or Nothing?

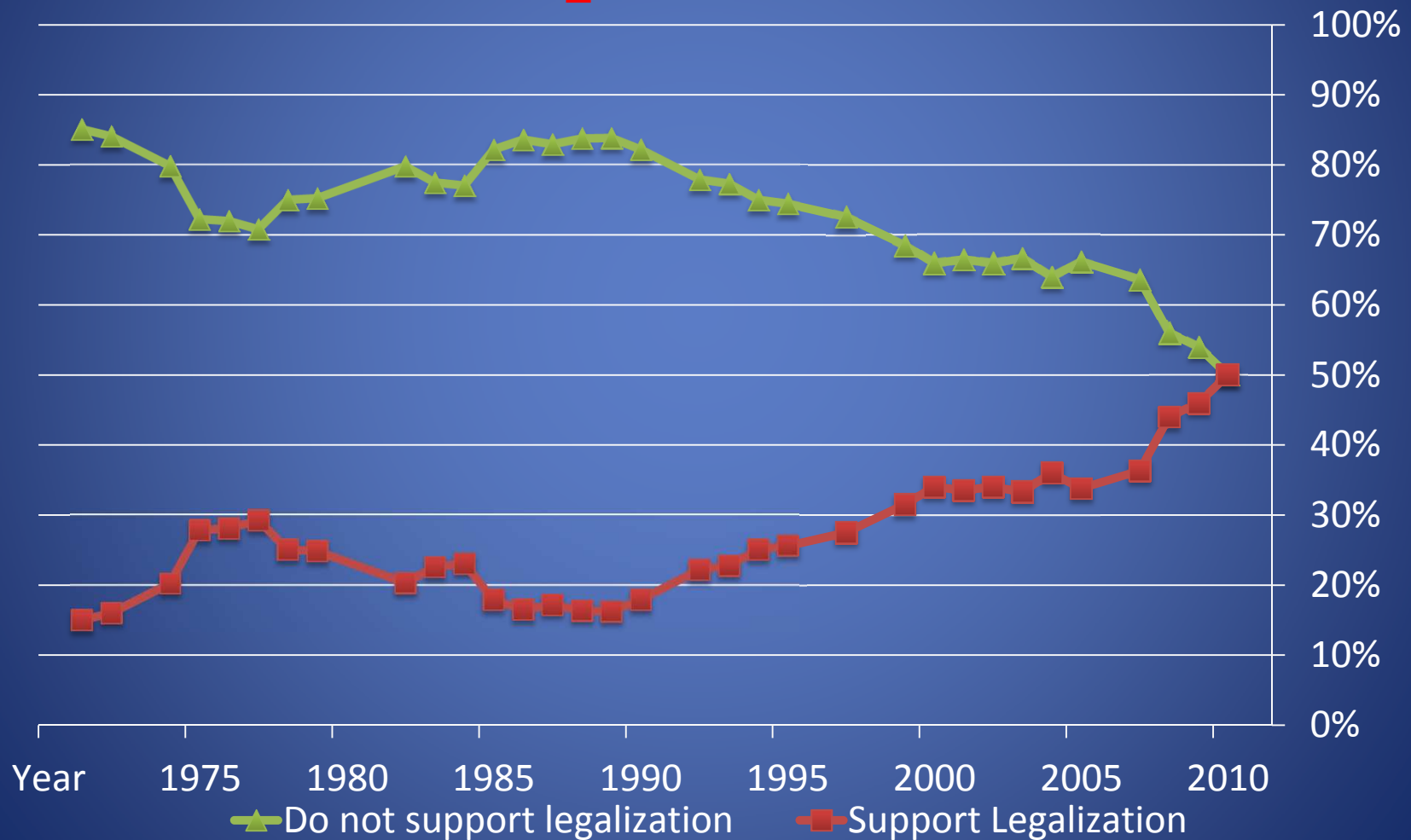
Legalization vs. Incarceration-Only



Legalization is now a reality.

**And it is gaining support every
year.**

Support for Marijuana Legalization Has Reached Unprecedented Levels



Sources: Gallup <http://bit.ly/olrSEQ> and GSS

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We Need A

“SMART APPROACH”

Not about legalization vs. incarceration

**We can be against legalization
but also for health, education, and
common-sense**



Chair, Patrick J. Kennedy

Launched January 10th, Denver

Over 5,000 press mentions

Public Health Board of Trustees

State Partners



- 1. To inform public policy with the science of today's marijuana.**
- 2. To have honest conversations about reducing the unintended consequences of current marijuana policies, such as lifelong stigma due to arrest.**
- 3. To prevent the establishment of Big Marijuana that would market marijuana to children — and to prevent Big Tobacco from taking over Big Marijuana. Those are the very likely results of legalization.**
- 4. To promote research of marijuana's medical properties and produce pharmacy-attainable medications.**



**To inform public policy with the
science of today's marijuana.**



To prevent the establishment of Big Marijuana that would market marijuana to children — and to prevent Big Tobacco from taking over Big Marijuana. Those are the very likely results of legalization.

Let's Not Repeat Mistakes of Alcohol & Tobacco

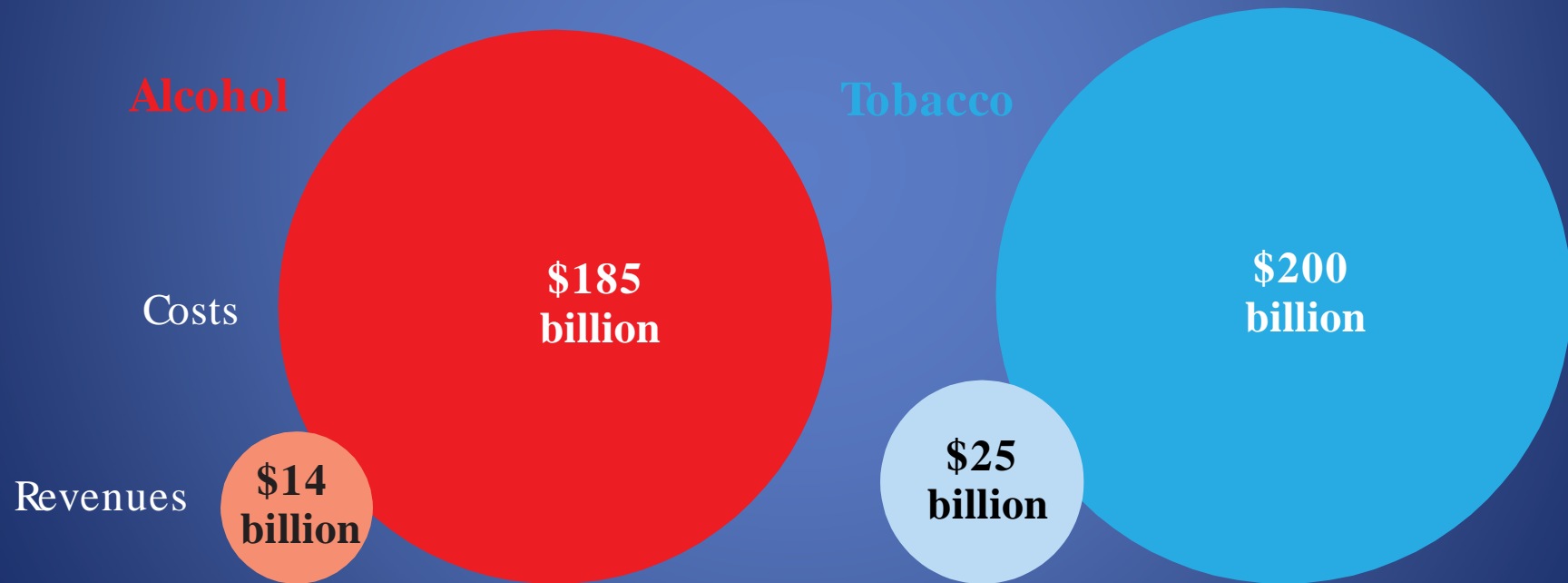
- Use levels for alcohol and tobacco are much higher than marijuana
- Industries *promote* addiction and target kids

What incentives do legal corporations have to keep price low and consumption high?

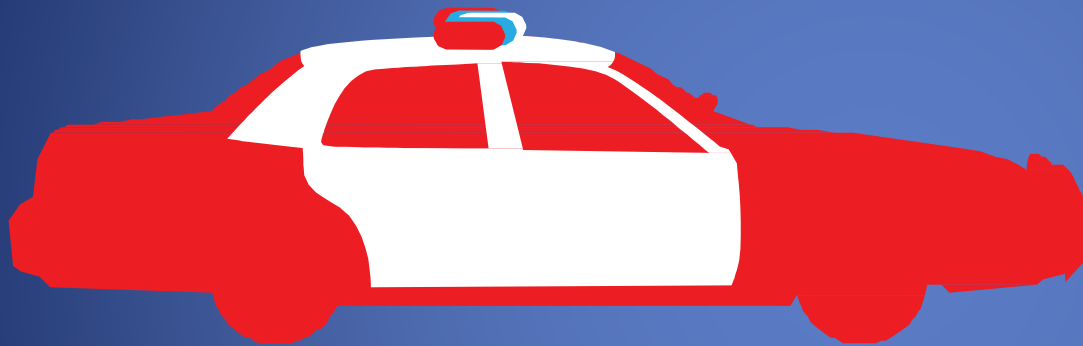
- “Enjoy Responsibly”
- Taxes today for alcohol are 1/5 of what they were during the Korean War (adj for inflation)

Alcohol & Tobacco

Money Makers or Dollar Drainers



“If Only We Treated It Like Alcohol...”



2.7 million

Arrests for alcohol-related crimes in
2008

(Does ***NOT*** include violence;
Includes violations of liquor laws and
driving under the influence)



847,000

Marijuana-related
arrests in 2008

Legalization = Cheaper Drugs = More Use

RAND Study:

- Price Will Drop More Than 80%
- Consumption Will Increase
- Tax evasion a major concern

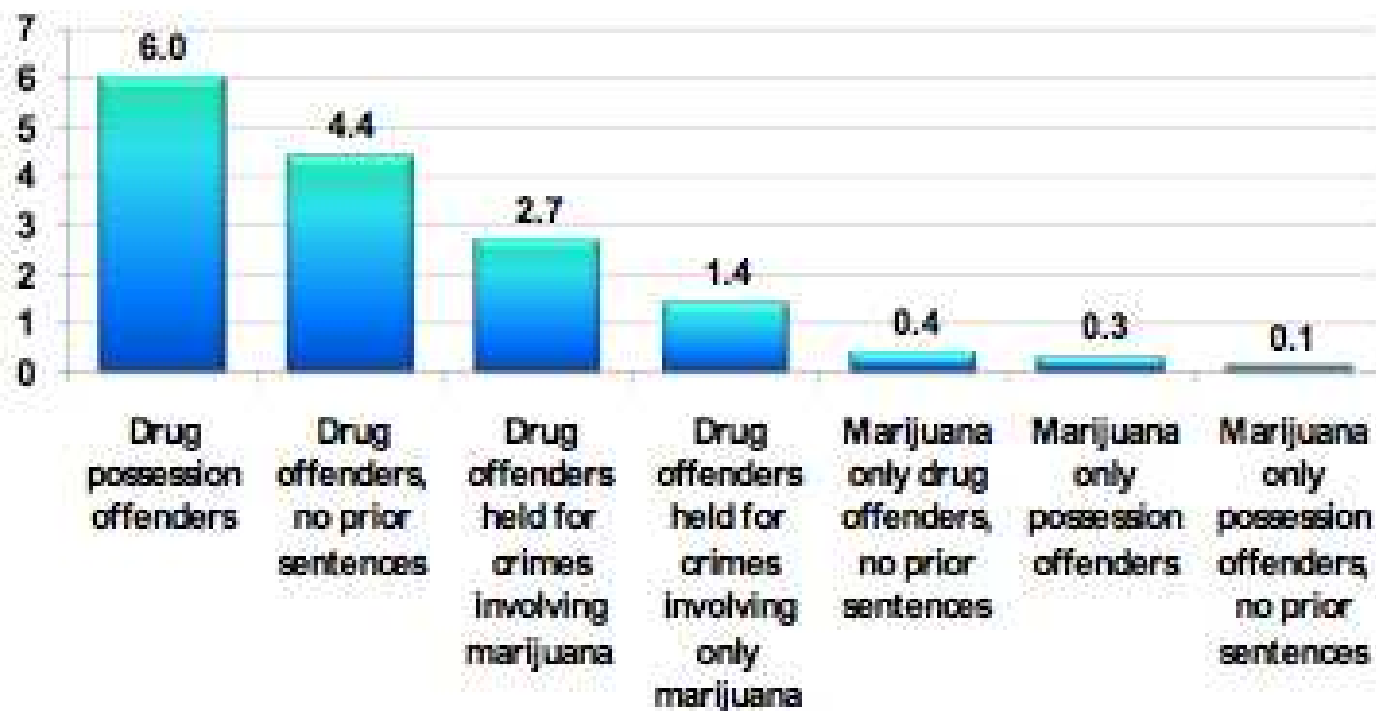
Kilmer, Beau, Jonathan P. Caulkins, Rosalie Liccardo Pacula, Robert J. MacCoun and Peter H. Reuter. 2010. "Altered State? Assessing How Marijuana Legalization in California Could Influence Marijuana Consumption and Public Budgets." Santa Monica, CA: RAND Corporation, http://www.rand.org/pubs/occasional_papers/OP315.

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E1

Drug Possession Offenders in State Prisons

Percent of State Prisoners, 2004



Source: Bureau of Justice Statistics, 2004 Survey of Inmates in State Correctional Facilities. Unpublished special tabulations (February 2008).

1/10/2015

Workplace/Employer Issues

Legalization for medicinal use

OR

recreational use

=

Operational implications for employers and
their businesses

Drugs in the Workplace

- Drugs, in general, pose problems on workplace
 - 3.6 times the accidents on the job
 - 5 times the accidents off the job
- Drug being used most often is marijuana
 - Rate of positive tests

Scenarios

“Blended” work environments:

- DOT vs Non
- Union
- Multi-State:
 - Marijuana laws
 - Discrimination laws
 - Employment law (workers’ comp., unemployment, etc.)

**Increased Headaches for Employers,
Costs in Legal Fees, Workers Comp, etc.**

Let's Not Go Back Here

The Liggett Group:

“If you are really and truly not going to sell [cigarettes] to children, you are going to be out of business in 30 years.”



R. J. Reynolds: “Realistically, if our company is to survive and prosper, over the long term we must get our share of the youth market.”

Lorillard: “The base of our business is the high school student.”

Phillip Morris: “Today's teenager is tomorrow's potential regular customer... Because of our high share of the market among the youngest smokers, Philip Morris will suffer more than the other companies from the decline in the number of teenage smokers.”

“The use of marijuana ... has important implications for the tobacco industry in terms of an alternative product line. (We) have the land to grow it, the machines to roll it and package it, the distribution to market it. In fact, some firms have registered trademarks, which are taken directly from marijuana street jargon. These trade names are used currently on little-known legal products, but could be switched if and when marijuana is legalized. Estimates indicate that the market in legalized marijuana might be as high as \$10 billion annually.”

From a report commissioned by cigarette manufacturer Brown and Williamson (now merged with R.J. Reynolds) in the 1970s.

“We cannot promote a comprehensive system of mental health treatment and marijuana legalization, which increases permissiveness for a drug that directly contributes to mental illness.”

- Patrick J. Kennedy, former congressman





“A world of legal drugs will be a world in which the fates of the top one third of Americans and the lower two thirds will diverge even more than they already do. We have opened more roads to self-harm. Must we now open another?”

- David Frum, Daily Beast columnist

“The unregulated tobacco industry is a worldwide public health disaster. We should learn from our mistakes, not repeat them with marijuana.”

**- Kimber Richter,
tobacco researcher, University of Kansas**



There are alternatives...

Prevention



Treatment



Recovery



**Smart
Enforcement**



**International
Efforts**



Any piece of sound legislation on marijuana should have these components:

- Increased community-based prevention to empower parents, physicians and other health care professionals to prevent marijuana use among children
- Increased screening and brief interventions in health care settings
- Increased access to recovery-oriented services
- Greater number of drug treatment courts and HOPE Probation programs
- Hawaiians have access to a special FDA compassionate research program deliverables to obtain non-smoked, non-psychoactive components for medical for therapeutic purposes.

Thank You!

Questions?

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